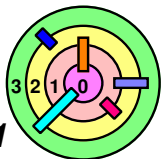


CS350 Exams

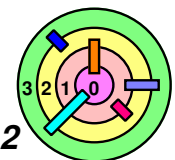
Bill Cheng

<http://merlot.usc.edu/william/usc/>



Purpose Of Exams

- ➡ Some people think that an exam is a learning experience
- not really
 - of course, you can learn from it, but that's not the main goal
 - it's more like SAT and GRE
 - it's an *assessment*
 - ◆ because I need to give you a *fair grade*
 - you are being tested for materials you have learned *in this class*
 - ◆ it's *not* about testing your general networking knowledge
 - ◆ you are tested on *knowledge (about CS 350) + familiarity* with course material + *"critical thinking"*



Midterm Exam Coverage

➡ Covers Ch 1 through section (TBD) of Ch 5
— lecture slides and textbook, except for noted exceptions

➡ Also covers the following material related to programming assignments:

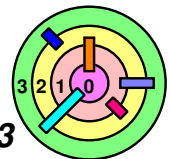
— PA1

- specs, FAQs, lecture slides

- ◆ xv6 book - Ch 0, 1, and traps in Ch 3

- ◆ debugging xv6

- will *not* ask you to write code, but can ask you about code in specs, FAQs, and slides



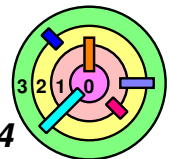
Question Types

➡ *Calculation-type* questions

- run algorithm, evaluate equation

➡ *Short answers*

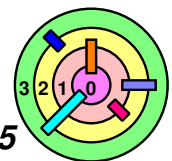
- give the *best answer* for a question
- if the question says, "In *N* words or less, ...", it's just a hint to tell you approximately how many words we expect
 - you can write more words
 - *exception*: when it's a fill-in-the-blank question (*N* would be small), then you *must not* use more than *N* words
- you get credit for including the right answer
- you get *deduction* for saying something wrong
 - cannot go below zero point
- must *not* answer a *general (high-level)* question by giving an example
- must *not* answer a *specific* question by giving a general (high-level) answer



Question Types

➡ *Multiple-choice*

- ➡ each question is worth 1 point and have 5 choices
- ➡ by default, choose *one correct* answer (or the *best* answer)
- ➡ if the question *explicitly* asks you to select *TWO* answers, select *two correct* answers (or the *best two* answers)
- ➡ if question has *one* correct answer
 - if you *choose only one answer*, you get 1 point if the answer you have chosen is the one in the solution key
 - ◆ otherwise, you get 0 point
 - if you *choose two answers*, the most you can get is 0.5 point
 - ◆ you get 0.5 point if one of the answers you have chosen is the one in the solution key
 - ◆ otherwise, you get 0 point
 - if you *choose more than two answers*, you get 0 point

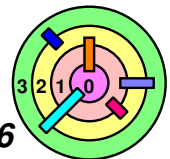


Question Types



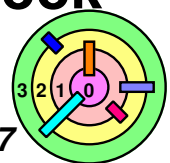
Multiple-choice (cont...)

- if question has **two** correct answers
 - if you choose **one** or **two** answers, each answer in the solution key is worth 0.5 point
 - if you **choose three answers**, the most you can get is 0.5 point
 - ◆ if two of them are in the solution key, you get 0.5 point
 - ◆ otherwise, you get 0 point
 - if you **choose more than three answers**, you get 0 point
- your answers must be separated by "separating characters", such as commas, semicolons, or spaces
 - e.g., "12" will not be interpreted as "1 2" (even though there is no 12th answer)
- please note that if a statement is **inconsistent** or **incorrect**, it must be considered to be a **"false"** statement



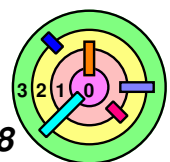
Answers To Questions

- ➡ **Correct/best answers** to most questions in the exam are **based on lecture slides** (and textbook)
- ➡ **lecture slides take precedence** since I cannot change textbook
 - ➡ please understand that exams are about materials in **this class**
 - it doesn't matter what you have read anywhere else
 - ➡ if you disagree with what's on a lecture slide or textbook, you need to complain to me **now** to set things straight
 - once the exam starts, it's too late to say that you don't like the answers on the lecture slides or textbook
 - ➡ I reserve the right to ask about things that I think you should know and **not** on lecture slides or in textbook
- ➡ Therefore, you should focus on studying **lecture slides** (and textbook)
- ➡ although it should be clear that for multiple-choice questions, the "wrong answers" are often not on lecture slides or textbook
 - you need to figure out why some answers are wrong
 - ➡ you need to **understand** lecture slides (and textbook)



Critical Thinking

- ➡ Read questions and answers carefully and ***critically***
- ▢ for every wrong answer in a multiple choice question, you should be able to ***pinpoint*** exactly why the choice is wrong
 - based on your ***knowledge of the course material***
 - you should be able to form a ***clear argument*** why the answer is incorrect
 - ▢ you must take the questions and answer choices ***as-is***
 - you must not add/delete/change words in the questions or answer choices

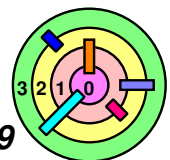


Critical Thinking



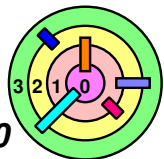
How to practice critical thinking

- form a small study group (post to Piazza to invite others to study together in-person or over Zoom)
- study lecture slides and come up with questions based on the slides
 - short answers
 - true/false questions
 - ◆ if you answer "false", you must give a precise reason why you think the answer is false
 - ◆ this way, you develop the *habit of being precise*



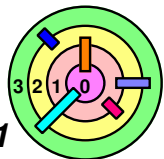
Sample Old Exams

- ➡ Exams from my CSCI 402 class last semester is available in the Exams section of the Course Description web page
- ➡ *I will **not** post solutions or tell you what correct answers are* since that exam is for another class
 - but you should take a look to get an idea
 - ➡ sample multiple-choice question:
 - Which of the following is correct/incorrect about X?*
 - Which of the following **TWO** are correct/incorrect about X?*
 - ➡ calculation-type questions
 - follow the calculations performed on lecture slides with different parameters
 - you should study all equations/calculations on lecture slides
 - ➡ sample "short answer" question:
 - Q: In 5 words or less **each**, what are the 3 possible types of questions in our exams?*
 - A: multiple-choice, calculation, short answer*
 - ➡ most questions on the exam are **multiple-choice questions**



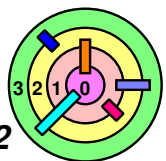
General Rules

- ➡ Read problem descriptions (especially multiple choice questions and answers) *very carefully*
 - you may *not* receive *any credit* if you *answer the wrong question*
 - if a question has multiple parts, make sure you answer every part and clearly *label* which answer is for which part
- ➡ We will give partial credit if applicable
 - *no guarantee* that you will get partial credit
- ➡ Do not just draw pictures to answer questions (unless the question asked you to draw pictures)
 - pictures will not be considered for grading unless they are clearly explained with words
 - not really applicable for a non-paper exam
- ➡ Please *ignore minor spelling and grammatical mistakes*
 - they do *not* make an answer invalid or incorrect



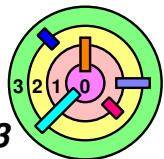
General Rules

- ➡ By default we will grade your last submission
- if you would like us to grade an earlier submission, you need to let me know soon after the exam is over
 - but some students are trying to game the system by making multiple submissions with different answers on purpose, then figure out what the right answer is after the exam
 - therefore, the rule for asking us to grade a different submission for exams will be *different* from the rule for programming assignments
 - we must grade either the *last late submission* or the *last on-time submission* (and cannot consider anything else)
 - this means that if you have both late submissions and on-time submissions, you get to choose either the last late submission or the last on-time submission
 - ◆ otherwise, no choice



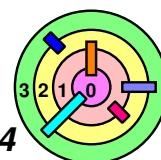
General Rules

- ➡ During the exam, you can email me questions to *clarify* problems
- ➡ please understand that email may take days to get delivered
 - please don't count on me to reply immediately
 - I will *only* reply by posting to class Piazza
 - ◆ you should have your email opened during the exam, although email may take days to get delivered
 - ➡ please do not ask for hints or ask if "it's okay to answer this way"
 - ➡ if you ask a *non-clarification* type question, I will *not be responsible* for the answer that you think I gave
 - ➡ I will *not* answer questions regarding *multiple choice questions*
 - because it gives answers away
 - read the question carefully and choose carefully
 - ◆ need to select all the right answers and not select any of the wrong answers
 - ➡ most likely, I will *not* answer any questions during the exam (unless I have made a major mistake)
 - need to *think critically*



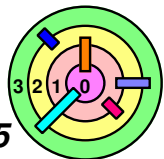
Midterm Exam Logistics

- ➡ Midterm exam is *[12:30pm - 1:10pm), Thu, 2/26/2025*, USC time
 - ➡ *Important Notation:* $[a,b)$ means $\geq a$ and $< b$
 - the left side of an interval is "closed" (i.e., includes a) and the right side of an interval is "open" (i.e., does not include b)
- ➡ Technically speaking, the midterm is a *take-home exam* and not an "online exam"
 - ➡ exams are open book, open notes, open Internet (not open friends, of course)
 - ➡ you are required to *sign an Honor Code Pledge* to promise that *you will not cheat* (including not using AI tools to answer exam questions)
 - *no signed pledge, no exam!*
 - one pledge for the midterm and one pledge for the final



Midterm Exam Logistics

- ➡ You can **opt-out** of the midterm exam and have your final exam account for 70% of your overall grade
- must let me know via email ahead of time
 - you don't need to tell me why
 - you can still opt out of the midterm even if you have submitted a signed pledge
 - no reason to wait to submit a signed pledge!
 - I do **not** recommend this at all because having your final exam worth 70% can be super stressful
 - once you have downloaded the midterm, it's too late to say that you want to opt out of the midterm exam
 - actually, if you miss the midterm for any reason, your final exam will account for 70% of your overall class grade
 - no make-up exam
- ➡ If you are registered with the Office of Student Accessibility Services (OSAS) and require specific accommodations, please make sure that I have your paperwork

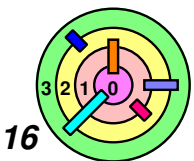


CS350

More Exam Logistics

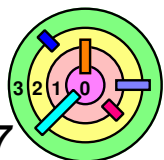
Bill Cheng

<http://merlot.usc.edu/william/usc/>



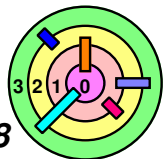
Midterm Exam Logistics

- ➡ Let's say that your exam time is [12:30pm-1:10pm) (if your exam is at a different time, please adjust accordingly)
- ➡ you are required to **stop working on exam at 1:10:00pm** and **finish submitting the exam strictly before 1:13:00pm**
 - if your submission timestamp is exactly 1:13:00pm, it will be considered as a **late submission**
 - ➡ **starting at 1:13:00pm**, you will **lose 5%** for **each late minute**
 - if your submission timestamp is $\geq 1:13:00\text{pm} \ \&\& \leq 1:13:59\text{pm}$, you will lose 5%
 - if your submission timestamp is $\geq 1:14:00\text{pm} \ \&\& \leq 1:14:59\text{pm}$, you will lose 10%
 - if your submission timestamp is $\geq 1:15:00\text{pm} \ \&\& \leq 1:15:59\text{pm}$, you will lose 15%, and so on
 - **the only timestamp** we can use is the **timestamp in the submission ticket** (i.e., my server timestamp)
 - ◆ it doesn't matter what the file system timestamp says since it can be easily forged



Midterm Exam Logistics

- ➡ Let's say that your exam time is [12:30pm-1:10pm) (cont...)
- what if you *lost Internet connection* when you submit?
 - I need *proof* that you really have an Internet problem
 - ◇ you must use an *offline screen recorder* that can create an MP4 video (or something that can be converted into an MP4 video) to record submission activity *starting at 1:10:00pm* as proof that you had Internet problem
 - ◇ you must follow all the instructions below
 - if you don't have Internet problem, you must submit using a web form (just like submitting assignments)
 - if you *email* your exam, it will be *at your own risk* since email delivery can take a long time
 - ◇ if you submit via email, the only timestamp I can use is the *timestamp issued by my email server* (and not by your email server)
 - ◇ by using email submission, you implicitly agree to accept both *rewards* and *risks*



Midterm Exam Logistics

➡ Let's say that your exam time is [12:30pm-1:10pm) (cont...)

1) setup email filter to never miss an email from

<bill.cheng@usc.edu> (and never send it to spam)

2) by 12:25pm, get your desktop ready

➡ use a clock app to display a clock on your desktop that shows your local time and make sure your clock is correct

➡ *start your screen recorder on your desktop* (don't start recording yet, just get it ready in case you need it later)

○ most people won't need to use it to record anything

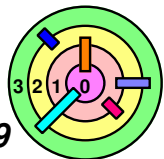
○ hopefully, you won't need it either

➡ get your submission PIN ready (same PIN as submitting assignments)

➡ set an alarm clock to go off at 1:09:00pm

➡ if your machine is known to crash from time to time, you should reboot your machine before 12:25pm

○ don't run anything you don't need for your exam



Midterm Exam Logistics

➡ Let's say that your exam time is [12:30pm-1:10pm) (cont...)

3) click on the *start exam link* in the *News* section of the class home page *about 3 minutes before the exam start time*

⇒ enter you USC Net ID and PIN and click the Submit button

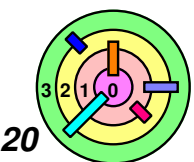
⇒ two links on the next web page

- first link to download a ZIP file that contains exam quetions (PDF file) and answers (text file)

- ◆ download it, unpack it, save *answers text file* on your *desktop* for eazy access

- 2nd link is for submitting your answers text file (same web submission form as submitting labs and PAs)

- ◆ *click on it immediately*, check time on submission server to *know the difference* between the submission server clock and you desktop clock



Midterm Exam Logistics

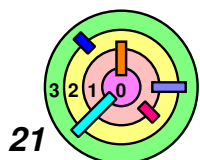
The screenshot shows a web browser window titled "Warmup Assignment #1 - CSCI 402". The address bar shows "merlot.usc.edu/cs402-m20". The page content includes instructions for submitting a file and a form for submission details. Two red boxes highlight specific areas:

- Left Box:** A red box highlights the "Alarms & Clock" applet showing "3:05 PM Local time Wednesday, June 24, 2020". A red arrow points to it with the text "ticking would be best!".
- Right Box:** A red box highlights the submission form and the timestamp "24Jun2020-15:03:35". A red arrow points to it with the text "reload to see changes".

The submission form includes the following fields:

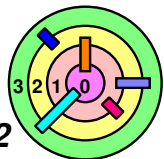
- USC E-mail: @usc.edu
- Submission PIN:
- Event ID (read-only): merlot.usc.edu_80_1557931083_61
- Submission File Full Path: Browse... No file selected.
- Upload button

The page also contains instructions: "Please enter your USC e-mail address and your submission PIN below. Then click on the Upload button. Then locate and select your submission file (i.e., warmup1.tar.gz). Then click on the Upload button. (Be careful what you click! Do NOT submit the wrong file!) If you see a dialog box, read the dialog box carefully and fix what needs to be fixed and repeat the procedure. If you see a submission PIN, please click this link to reset your PIN: https://merlot.usc.edu/cs402-m20/reset-pin".



Midterm Exam Logistics

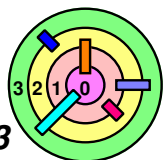
- ➡ Let's say that your exam time is [12:30pm-1:10pm) (cont...)
- 3) click on the *start exam link* in the *News* section of the class home page *about 3 minutes before the exam start time* (cont...)
- ➡ a backup email is sent to your USC email address
 - don't wait for this email since this is just a backup and email can take days to get delivered
 - ➡ you can work on your exam as soon as you get the ZIP file
 - *don't make a copy* of the *answers text file* because you may end up submitting the wrong file!
 - ◆ just work on the one you saved on your *desktop*
 - ➡ if there are issues, send me email
 - but please understand that email can take a long time to get delivered
 - it's imperative that you *practice* the exam procedure by doing the *midterm rehearsal* so you know what to expect (use Quiz 4 as your midterm rehearsal)



Midterm Exam Logistics

➡ Let's say that your exam time is [12:30pm-1:10pm) (cont...)

- 4) when you have finished your first pass through the exam, make a submission (it should only take a few seconds)
 - ➡ if you see a submission *ticket*, verify that the *file name* and *file size* look right and *Verify Your Ticket*
 - save web page as PDF as a record of your submission
 - ➡ feel free to make additional submission if you change your answers text file
- 5) when your alarm goes off at 1:09:00pm, you need to wrap things up and get ready to submit your answers text file
- 6) at 1:10:00pm, you *must stop working* on your answers
 - ➡ I cannot stress enough how important it is to *drop everything and do this* at 1:10:00pm
 - ➡ if your answers text file is the same as your most recent submission, then you are *done* (feel free to make additional submission if you changed your answers text file)
 - ➡ otherwise, proceed to step (7)

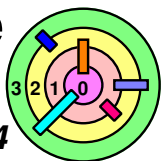


Midterm Exam Logistics

➡ Let's say that your exam time is [12:30pm-1:10pm) (cont...)

7) reload the submission web page

- ➡ if **successful** (i.e., you have Internet connectivity), note the difference between server time and your desktop time
 - make a submission
 - if you get a server error, just **keep trying**
 - ◆ server is busy because too many students are submitting at the same time
 - ◆ you have 3 minutes, sooner or later, your submission will go through
 - ◆ this is why **you must start submitting at 1:10:00pm**
 - if you see a submission **ticket**, follow the **Verify Your Ticket** procedure and notice the **server timestamp**
 - ◆ save web page as PDF, this is your proof that your submission has made it to my server
 - ◆ one proof is enough and you do not need to see the backup email that contains the ticket

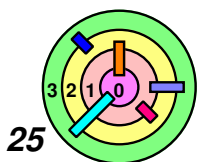


Midterm Exam Logistics

➡ Let's say that your exam time is [12:30pm-1:10pm) (cont...)

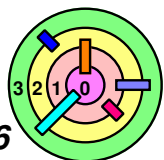
7) reload the submission web page (cont...)

- ➡ if **unsuccessful** (i.e., you have **no Internet** connectivity), **start recording** your desktop right away as proof that you don't have connectivity at 1:10pm
 - **open answers text file** and **record its entire content** in your video **one page at a time** and take **photos** with your cellphone
 - ◆ when you are done, **reload the browser** to prove that you still don't have Internet connectivity
 - ◆ **make sure your desktop clock** is being recorded
 - **stop recording** (before 1:13:00pm), do not delete your video and photos
 - ◆ **send me an email** from your cellphone **immediately**, **attach photos** and let me know that **you have Internet problem at 1:10pm** AND **you have a video proof**
 - ◆ do **not** send me the video unless I ask for it



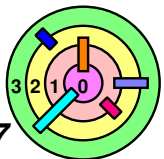
Midterm Exam Logistics

- ➡ Let's say that your exam time is [12:30pm-1:10pm) (cont...)
- 7) reload the submission web page (cont...)
- ➡ if **unsuccessful** (cont...)
 - **when you get your Internet back**, submit your answers text file using the submission web form
 - ◆ save ticket web page as PDF and send me email to let me know that you have got your Internet back
 - ◆ your answers text file should be identical to the one in the video and in the photos
- ➡ Please remember that the **only** timestamp we can use to determine late submission penalty is the **timestamp in the submission ticket**
- ➡ please also remember that **it takes time** for your submission to reach the submission server (Internet is unpredictable) — don't submit till the last second
 - don't take unnecessary risks

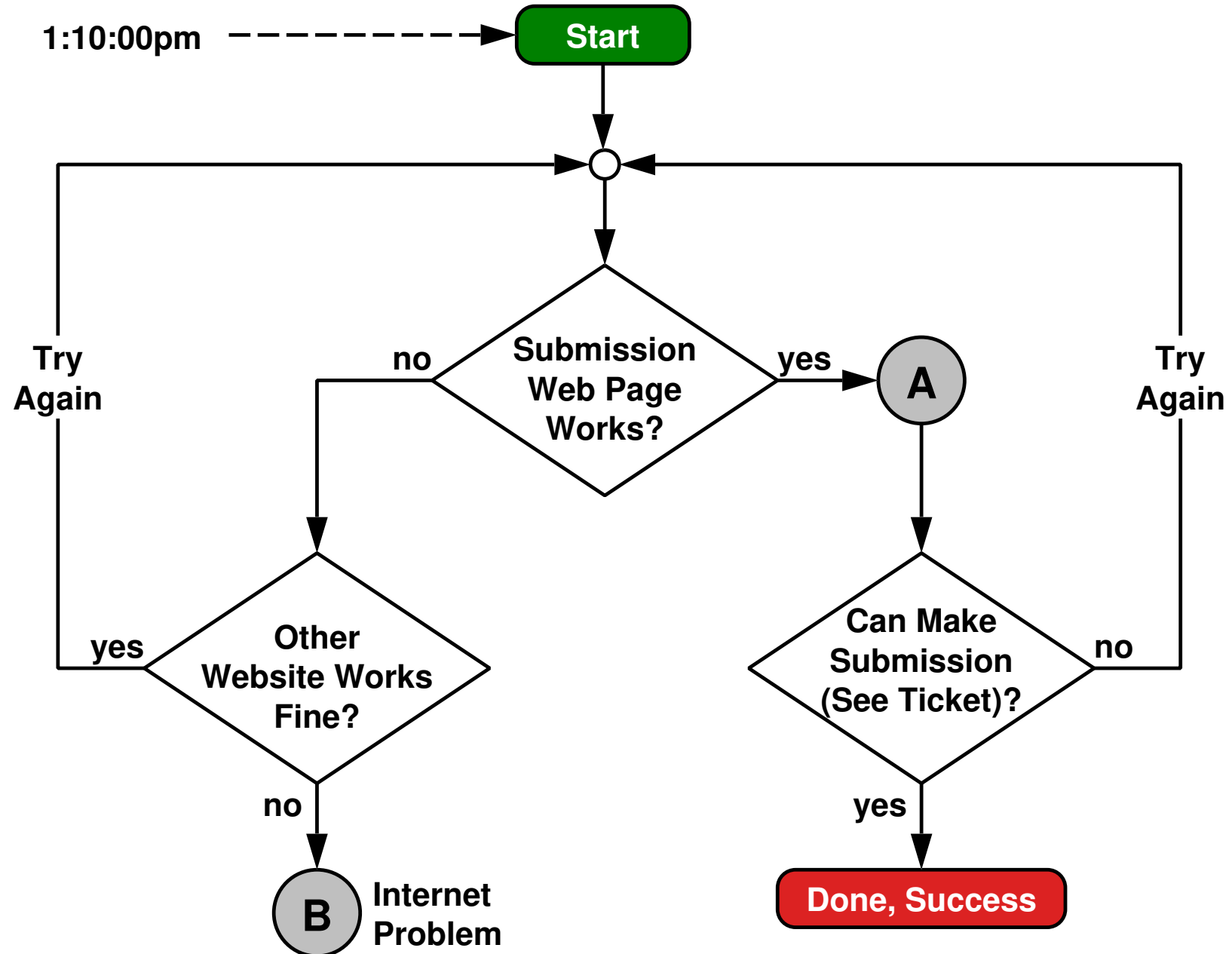


Offline Screen Recorders

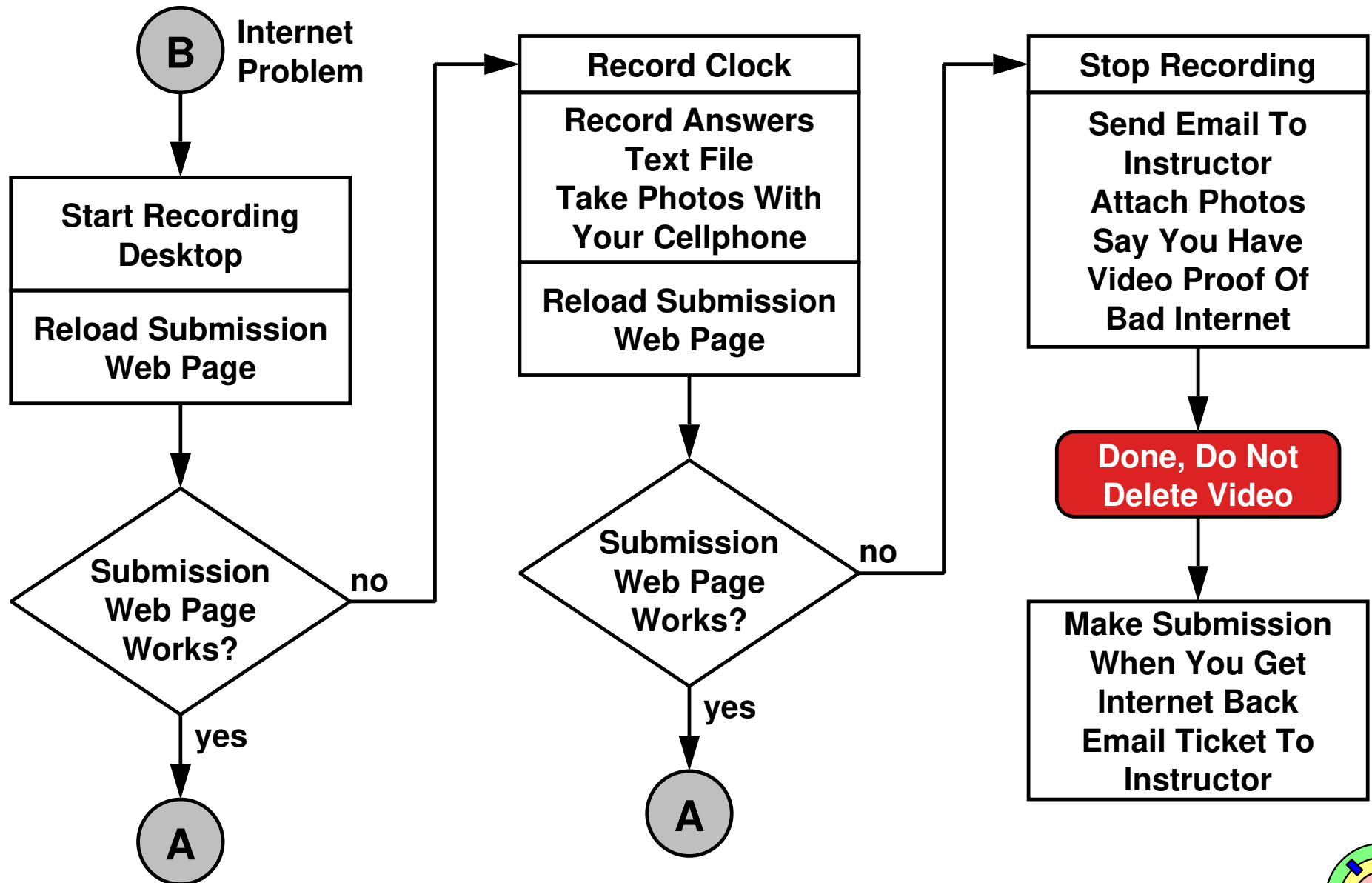
- ➡ On Windows 10/11, you can use the Game Bar or the Snipping Tool
 - <Win+G> or <Win+Shift+R>
- ➡ On MacOS, you can use the Quicktime Player app
 - click on the File Menu and click on New Screen Recording
- ➡ You can use your *smartphone* as a video recorder if your cellphone can create MP4 videos (i.e., Android) or MOV videos (i.e., iPhone)
- ➡ Remember, you must record the clock app on your screen *showing the current time*
- ➡ You need to *practice* to make sure that it can record video in the MP4 or MOV format
 - disable wifi to simulate Internet connectivity problem
- ➡ I don't know for sure if the above screen recorders are truly offline recorders or not, please let me know if they are not



Step (7) Flow Chart

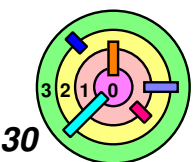


Step (7) Flow Chart



Midterm Exam Logistics

- ➡ What if your **machine crashed** when you are making a submission and it takes 5 minutes to reboot?
- ➡ I need **proof** that your machine crashed
 - start recording with your smartphone immediately to record your machine as it restarts and **record the entire process**
 - as soon as the machine is up and running, open your **answers text file** and scroll through it to record its **entire content**
 - keep recording and **submit** your **answers text file** using the **submission web form**
 - now you can **stop recording**, don't delete the video
 - ◆ **send me an email immediately**, let me know that **your machine crashed AND you have video proof**
 - ◆ do **not** send me your video unless I ask for it
- ➡ If your machine is prone to crashes, you should make multiple submissions earlier!



Midterm Exam Rehearsal

- ➡ Please try out the midterm rehearsal (with my old exam from a different class)
 - ▬ practice all the steps so you know what to expect
 - practice as many time as you would like
 - *try out different scenarios* (e.g., disable wifi to simulate Internet connectivity problem)
- ➡ For the real exam, you cannot say that you submit late because you are not familiar with some of the steps

